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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,654	02/14/2002	Stanley S. Toncich	UTL 00161	5491
32968	7590	06/14/2005		
KYOCERA WIRELESS CORP. P.O. BOX 928289 SAN DIEGO, CA 92192-8289			EXAMINER JONES, STEPHEN E	
			ART UNIT 2817	PAPER NUMBER
DATE MAILED: 06/14/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/077,654

Applicant(s)

TONCICH, STANLEY S.

Examiner

Stephen E. Jones

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 4-19 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,2 and 4-19 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 22 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 and 4-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons (US 3,676,803 of record) in view of Nakamichi (EP 0909024A2 of record) and Makino et al. (US 5,945,887 of record).

The Simmons reference discloses in figure 2 an isolator (see col. 2, lines 56-57) with electronically tunable matching circuits A-C serving as input, output, and isolation matching networks, respectively (see figure 2). The reference discloses bias ports 14 that control the diode varactors 2a-2c (i.e. voltage tunable capacitors); however, a ferroelectric varactor (i.e. tunable capacitor) is not shown, and Simmons does not explicitly teach that the circuit is integrated on the same substrate so that they are naturally matched and function as in the claims (Claims 1, 13, 14, 15, 16, 17, 18, 19).

The Nakamichi et al. reference discloses in figure 1 a ferroelectric variable capacitor (i.e., voltage tunable) {see [0014, 0015, 0018, 0024]}. As would have been well known, the ferroelectric voltage tunable capacitor offers the advantage over semiconductor varactors of not being susceptible to overheating and burnout as well as having a larger capacitance range.

Makino provides the general teaching of providing an isolator, matching, and amplifier on the same substrate (e.g. see Figs. 1-7). Also, Makino provides the general teaching that 12.5 ohms is a typical impedance value for such circuits and also teaches matching between 2 ohms at an amplifier and 12.5 ohms at the isolator.

Accordingly, it would have been considered obvious to one of ordinary skill in the art to have provided the entire Simmons circuit on a single substrate such as taught by Makino, because it would have provided the advantageous benefit of a compact arrangement and less components as is shown by Makino.

Also, it would have been obvious to one of ordinary skill in the art at the time of the invention to have substituted art-recognized equivalent ferroelectric tunable capacitors of Nakamichi et al. in place of the semiconductor tunable capacitors (i.e. varactor diodes) in the isolator circuit of Simmons because such a substitution of art-recognized equivalent varactors would have advantageously provided better overheating/burnout protection and a larger capacitance range. With respect to control lines and control source, such a modification would have been required because the tunable devices are controlled electronically as suggested by both Simmons (col. 3, lines 1-3) and Nakamichi et al. (see [0049]).

With respect to the limitations of use of the matching circuits as an amplifier-to-isolator matching circuit and/or isolator-to-multiplexer matching circuit for matching circuits A and C as recited in claims 4 and 8, it should be noted that use of an isolator in a communication device with power amplifiers and multiplexers is well known and such a modification would have been obvious based on the desired use.

Regarding Claim 16, it would have been considered obvious to one of ordinary skill in the art to have selected the modified circuit to have the input matching impedance to be 2 ohms at the amplifier output and 12.5 ohms at the isolator input such as taught by Makino (e.g. Fig. 2), because it would have been considered a mere optimization of the impedance/matching of the circuit based on the selection of well-known impedance value amplifiers and isolators such as taught by Makino. Furthermore, it would have been considered obvious to one of ordinary skill in the art to have selected the output matching circuit to be about 12.5 ohms at the isolator output and 12.5 ohms at the duplexer input, especially since Simmons is silent as to the impedance values and Makino teaches that 12.5 ohms is a typical value, thus it would have been a mere optimization of the impedance matching based on the selected impedance value of the desired choice of duplexer (Claims 14 and 18).

Also regarding Claims 13, 15, 17, and 19, as an obvious consequence of the combination resulting in the same structure as the presently claimed structure, the device would function equivalently to the presently claimed invention.

### ***Response to Arguments***

3. Applicant's arguments with respect to the amendments to claim 1 have been considered but are moot in view of the new ground(s) of rejection including the Makino reference of record.

***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

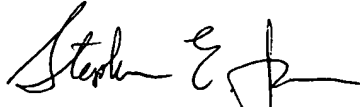
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen E. Jones whose telephone number is 571-272-1762. The examiner can normally be reached on Monday through Friday from 8 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SEJ



**STEPHEN E. JONES**  
**PRIMARY EXAMINER**